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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,467	11/08/2001	Fang-Hvi Chan	B-4373 619285-5	4294

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EXAMINER	
LAO, LUN YI	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/045,467	CHAN ET AL.	
	Examiner	Art Unit	
	LUN-YI LAO	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,10 and 11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,10 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

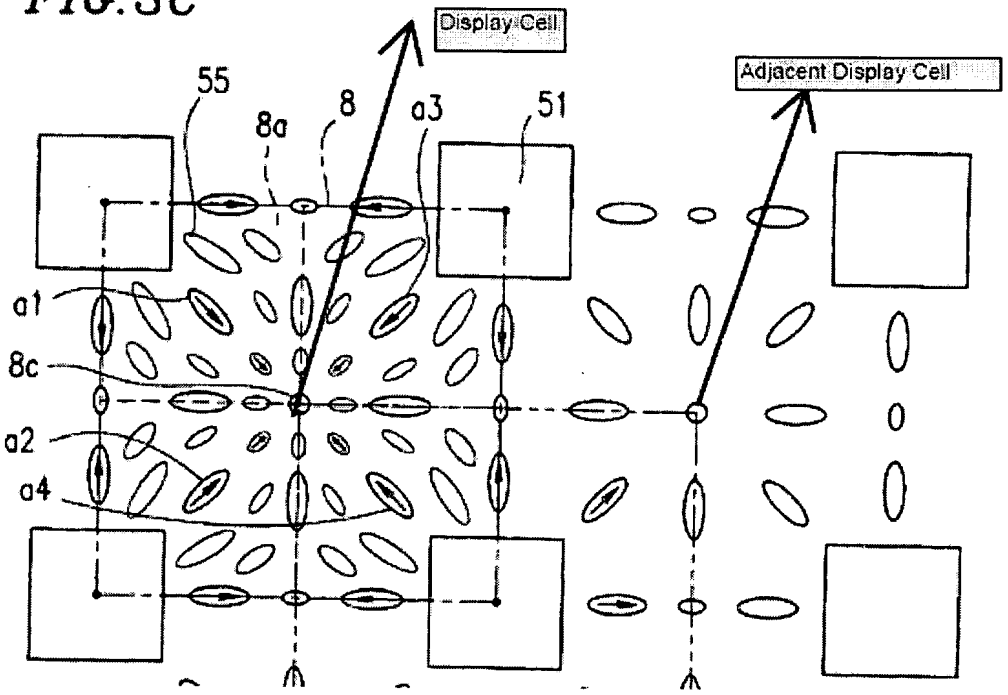
2. Claims 10-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al(6,067,141).

Yamada et al teach a liquid crystal display device comprising a plurality of display cell comprising a first substrate(50) and a second substrate(60) facing the first substrate(50); a space for housing liquid crystal molecules(69) being formed between a first substrate(50) and a second substrate(60); a plurality of liquid crystal molecules formed in the space in a predetermined arrangement(see figures 3A-3C; column 7, lines 61-68; column 8, lines 1-29; column 12, lines 35-68; column 13 and column 14, lines 1-8); four electrodes(a plurality of electrodes(51) in each display cell)(see figure 3C) disposed on the first substrate(50) and at corner of each display cell(8) and the electrodes(51) disposed such that a center area of each display cell(8) is prevented from being shielded by the electrodes(51), and when an external voltage(see figure 3A)

is applied between the four electrodes(51); an axially symmetric electrical field is generated between the four electrodes to change the arrangement of the liquid crystal molecules(69)(see figures 3A, 3C; column 12, lines 35-68; column 13 and column 14, lines 1-8).

As to claim 11, Yamada et al the electrical field generated within one of the display cells does not affect the liquid crystal molecules of an adjacent display cell(see figure 3).

FIG. 3C



Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiltshire(5,313,562) in view of Liu et al(6,476,896).

Claim 1

Wiltshire teaches a liquid crystal display device comprising a first substrate(2) and a second substrate(3) facing the first substrate(2). A space is formed between the first substrate(2) and the second substrate(3)(see figure 1 and column 2, lines 28-55). A plurality of electrodes (9, 10 or 11, 12) are paired and disposed on the first substrate(2)(see figure 1 and column 2, lines 28-55). Wiltshire teaches electrodes(9, 10 or 11, 12) paired and being in parallel with each other(see figure 1). Wiltshire teaches each pair of electrodes(9, 10 or 11, 12) comprises a first electrode (9) with a first end and two symmetric first lateral sides connecting with the first end, formed on the first substrate(2) and a second electrode (10) with a second end and two symmetric second lateral sides connecting with the second end, formed on the first substrate(2) and the first end faces the second end with a discharge gap there between(see figure 1 and column 2, lines 28-55). When an external voltage(VX) is applied between the first and

the second electrodes(9, 10), an axially electrical field is generated to change the arrangement of the liquid crystal molecules(see figures 1, 2, 4; column 2, lines 56-68 and column 3, lines 1-31). Wiltshire teaches the length of the first end is less than the length of the two symmetric first lateral sides and the length of the second end is less than the length of the two symmetric second lateral sides(see figures 1, 7).

Wiltshire fails to disclose both the width and the thickness of the first electrode increase from the first end to the other end, and both the width and the thickness of the second electrode increase from the second end to the other end.

Liu et al teach the width the first electrode increase from the first end to the other end (see figure 6(h)); the width the second electrode increase from the second end to the other end(see figures 6(h)); the first end facing the second end with a discharge gab therebetween(see figures 4,5, 6(h), 7(a); abstract; column 5, lines 40-50; column 6, lines 61-68 and column 7, lines 1-5). It would have been obvious to have modified Wiltshire with the teaching of Liu et al, since Liu has disclosed the shape of electrodes could be changed(see figures 6(a)-6(h) and abstract and the modified LCD display could provide fast response speed for its application and higher transmittance than conventional LCD displays(see abstract).

It would have been obvious to have the thickness of the first electrode increase from the first end to the other end and the thickness of the second electrode increase from the second end to the other end since such a modification would have involve a mere change the thickness of the electrode. A change in thickness is generally recognized as being within in the level of ordinary skill in the art and to achieve the

predictable result. See KSR Internal Co. v. Teleflex Inc., 550 U.S. --, 82 USPQ2d 1385(2007).

Claim 2

Liu teaches that the predetermined arrangement of the liquid crystal molecules is in a vertical alignment, each liquid crystal molecule has a longitudinal axis, and the longitudinal axis is substantially perpendicular to the first substrate(see figures 4, 7a; column 2, lines 63-68 and column 5, lines 40-60).

Claim 3

Liu teaches that the predetermined arrangement of the liquid crystal molecules is in a vertical alignment, each liquid crystal molecule has a longitudinal axis, and the longitudinal axis is substantially perpendicular to the second substrate(see figures 4, 7a; column 2, lines 63-68 and column 5, lines 40-60).

Claim 6

Wiltshire teaches an LCD display having a first electrode(9 or 11) having a first end and a second electrode(10 or 12) having a second end(see figure 1 and column 2, lines 28-65) and the first electrode is symmetrical to the second electrode along a line of axial symmetry(see figure 1)

6. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Wiltshire(5,313,562) in view of Liu and Kim et al(6,642,985).

Claim 4-5

Wiltshire teaches an LCD display having a first electrode(9 or 11) having a first end and a second electrode(10 or 12) having a second end(see figure 1 and column 2, lines 28-65). Wiltshire does not specifically teach the predetermined arrangement of the liquid crystal molecules in a horizontal alignment.

Kim et al(6,642,985) teach the predetermined arrangement of the liquid crystal molecules is in a horizontal alignment, each liquid crystal molecule has a longitudinal axis, and the longitudinal axis is substantially parallel to the first substrate(1) or second substrate(11) and perpendicular to a line formed by the first end and the second end(see figures 3-4 and column 4, lines 10-23). It would have been obvious to have modified Wiltshire as modified with the teaching of Kim et al(6,642,985), so as to provide an LCD display would be more productive and stable.

Response to Arguments

5. Applicant's arguments filed on August 16, 2007 have been fully considered but they are not persuasive.

Applicants argue that Yamada does not teach an axially symmetric electrical field is generated to change the arrangement of the liquid crystal molecules on page 5-6. The examiner disagrees with that since Yamada teaches since Yamada teaches an axially symmetric electrical field when a voltage is applied is generated to change the arrangement of the liquid crystal molecules(see figure 3A; column 12, lines 5-68 and column 13, lines 1-7),

Applicants argue that the references do not teach disclose both the width and the thickness of the first electrode increase from the first end to the other end, and both the width and the thickness of the second electrode increase from the second end to the other end on page 7-8. The examiner disagrees with that(see paragraph #4 above).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 11, 2007

Lun-yi Lao
Primary Examiner